

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

In re Application of:

Confirmation No.: **6624**

**Jong Chul BANG**

Group Art Unit: **3749**

Serial No.: **10/721,179**

Examiner: **Kenneth RINEHART**

Filed: **November 26, 2003**

Customer No.: **34610**

For: **DRYER**

**APPELLANT'S REPLY TO EXAMINER'S ANSWER**

U.S. Patent and Trademark Office  
Customer Window, Mail Stop Appeal Brief - Patents  
Randolph Building  
401 Dulany Street  
Alexandria, Virginia 22314

Sir:

In response to the Examiner's Answer dated October 1, 2008, consideration of the following remarks is respectfully requested.

The present application is directed to a dryer that includes an improved heater assembly 18. The heater assembly 18 may include a heater case 53, a plate 56 positioned in the heater case 53 so as to partition the heater case into an upper passage 53a and a lower passage 53b, a first coil array 60 having a plurality of first coils 61-66, and a second coil array 70 having a plurality of second coils 71-76. Each of the coil arrays 60 and 70 crosses the plate 56 multiple times so as to alternately position the respective coils thereof in the upper and lower passages 53a and 53b of the heater case 53.

More specifically, the plurality of first coils 61-66 are alternately positioned on opposite sides of the plate 56 in the upper and lower passages 53a and 53b. Likewise, the plurality of second coils 71-76 are also alternately positioned on opposite sides of the plate 56 in the upper and lower passages 53a and 53b, so that the first coils 61, 63 and 65 and second coils 72, 74 and 76 in the upper passage 53a form an alternating pattern in the upper passage 53a, and the first coils 62, 64 and 66 and second coils 71, 73 and 75 in the lower passage 53b form an alternating pattern in the lower passage 53b. That is, each of the coil arrays 60 and 70 form a zig-zag pattern across the plate 56, so that each coil of the first coil array 60 is positioned between two coils of the second coil array 70 on its respective side of the plate 56, and each coil of the second coil array 70 is positioned between two coils of the first coil array 60 on its respective side of the plate 56. This alternating pattern, which extends along the length of the heater case 56, is shown in cross section in Figure 3 of the present application.

The first and second coil arrays 60 and 70 may be operated independently. In the event that higher temperature heating is desired during a particular drying cycle, both coil arrays 60 and 70 may be operated. In the event that lower temperature heating is desired during a particular drying cycle, only one of the coils 60 or 70 may be operated, while the other remains shut off and does not generate heat, thus heating the air passing through the heater assembly 18 to a lower temperature than if both coils 60 and 70 were turned on (see, for example, paragraph 59 of the present application). The alternating arrangement of the plurality of first coils 61-66 and the plurality of second coils 71-76, both on opposite sides of the plate 56, and along the length

of the heater case 53, produces a more uniform distribution of heat through the heater assembly 18. This, in turn, produces more uniform heat supplied to the drum 12, and reduces/eliminates any hot spots that may occur along the length of the heater assembly 18 due to a concentration of coils operating a one area, while no coils are in operation in another area of the heater case 53 (see, for example, paragraphs 63 and 64 of the present application).

At page 13, Item I. of the Examiner's Answer, the Examiner asserts that the claimed multiple crossings of the plate by the first and second coil arrays and the alternating patterns formed by the coils of the first and second coil arrays are each matters of design choice. The Examiner further asserts that:

“[T]he applicant is attempting to distinguish his invention from the prior art through claim language dealing with the location of various parts. Both the applicant's invention and the cited references function in the same manner.”

Applicant respectfully disagrees with both of these assertions. Rather, it is respectfully submitted that the features of the dryer as claimed are both structurally and functionally different from the drying devices disclosed by Sherrill and/or Drews, and that these features would not have been a matter of obvious design choice. These very clear structural differences between the features of the dryer as claimed in the present application and the drying devices disclosed by Sherrill and Drews, either alone or in combination, produce a significant improvement in functionality of the dryer as claimed in the present application, and a functionality which is different than that produced by the drying devices disclosed by Sherrill and/or Drews.

More specifically, these structural differences result in a uniform distribution of heat along substantially the entire length of the heater case 53, and in both the upper and lower passages 53a and 53b of the heater case 53, regardless of whether one or both of the coil arrays 60 and 70 is operating. In contrast, neither of the drying devices disclosed by Drews and Sherrill produces this type of result.

More particularly, in Sherrill's device, if the first heater element 10a were to be turned on, and the second heater element 10b were to be turned off, the three coils of the first heater element 10a that are positioned above the plate 14 would heat the air in that portion of the housing, and the three coils of the first heater element 10b that are positioned below the plate 14 would heat the air in that portion of the housing. This would result in a higher intensity heating of the air passing through the upstream portion of the housing, and a cooling of that air as it flows through the downstream portion of the housing (in the area of the non-operating second heater element 10b). This higher intensity in the upstream portion of the housing would produce a localized hot spot in that area of the housing, and possibly non-uniform cooling of the heated air as it passes through the downstream portion of the housing.

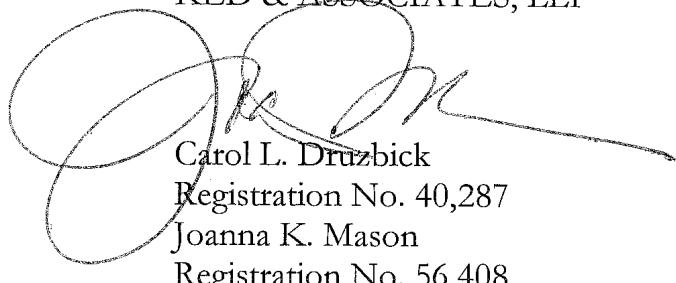
In contrast, due to the due to the alternating arrangement of the coils of the first and second coil arrays provided for by their multiple crossings of the plate 56 as set forth in the present application, the air passing through the heater case 53 may uniformly heated along the full length of the heater case, and in both the upper and lower passages 53a and 53b of the heater case 53. It is respectfully submitted that these features, in particular, the multiple

In Response to Examiner's Answer dated October 1, 2008

crossings of the plate by the first and second coil arrays and the alternating arrangement of the coils of the first and second coil arrays, are not a matter of obvious design choice. Rather, incorporation of such features into Sherrill's drying device, which was applied to teach multiple coil arrays, would require a complete redesign of the plate 14, the first and second heater elements 10a and 10b, and the connections between the respective coils of the heater elements 10a and 10b. Such a modification would add undue cost and complexity to Sherrill's drying device, and may destroy the originally intended functionality of Sherrill's device.

For the reasons set forth above, and for the reasons set forth in Applicant's Appeal Brief filed on August 7, 2008, it is respectfully submitted that Sherrill and Drews, either alone or in combination, neither disclose nor suggest a dryer as claimed in the application under appeal. It is respectfully requested that the Honorable Board reverse the rejections set forth in the January 14, 2008 Office Action, and to pass this application to issuance.

Respectfully submitted,  
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**Date: December 1, 2008**

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